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A new species of *Lentinus* from India

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ABSTRACT—*Lentinus alpacus* sp. nov. is described, illustrated, and discussed based on collections made in Maharashtra State, India. *Lentinus alpacus* is tentatively placed in subg. *Panus* sect. *Panus*, where it is distinguished by its small, reddish brown, squarrose basidiomata.

KEY WORDS—*Basidiomycota*, *Polyporaceae*, *Polyporales*, taxonomy

Introduction

The genus *Lentinus* sensu Pegler (1983b; *Polyporaceae*) is widespread in the tropics. A review of literature (Manjula 1983; Natarajan et al. 2005; Kumaresan & Senthilarasu unpubl. data) revealed that the genus is well represented in India. Several species have been described and reported from Kerala State alone (Manimohan & Leelavathy 1995; Joseph et al. 1995; Manimohan et al. 2004; Kumar & Manimohan 2005), but only one species, *L. cochleatus*, has been reported from Maharashtra State (Trivedi 1972). In this paper, a new species of *Lentinus* collected from Pune, Maharashtra State, is described, illustrated, and discussed.

Materials & methods

Thin, handmade sections were made from dried specimens, revived in 10% KOH, and stained in 3% Phloxine. Fifty basidiospores were measured for evaluation of the range of spore-size and extreme values are given in parentheses followed by mean spore measurements in parentheses. Camera lucida diagrams were made using a Nikon Y-IDT prism attached to a Nikon E200 microscope. Microphotographs were made using Zeiss Axio Imager A2 microscope. The colour names and notations used are from Kornerup & Wanscher (1978). The examined collections cited are deposited at Ajrekar Mycological Herbarium (AMH), MACS' Agharkar Research Institute, Pune, India.

Taxonomy

Lentinus alpacus Senthil. & S.K. Singh, **sp. nov.**

PLATES 1, 2

MYCOBANK MB563805

Differs from *L. courtetianus* in a squarrose red pileus and thin, hispid stipe.

TYPE: India, Maharashtra State, Pune, Pune University Campus (18°31'18.4"N 73°49'53.6"E), on decaying twigs, solitary, 21.07.2011, G. Senthilarasu (**holotype**, AMH 9442).

ETYMOLOGY: *alpacus* (Sanskrit), small.

PILEUS 6–25 mm diam., orbicular, plano-concave or infundibuliform; surface Venetian red (8D7) to Persian red (8E8), squarrose: scales reddish brown (9F8), more towards the disc, at first often with purplish tints; margin incurved, thin, entire, ciliate, not striate. LAMELLAE subdecurrent, white to orange white (5A2) to pale orange (5A3) to grayish orange (6B3), becoming dark brown (8D4–8D5) on drying, crowded, with numerous lamellulae, thin, less than 1 mm broad; edge entire, concolorous with the sides. STIPE central to excentric, rarely lateral, 14–25 × 1–1.5 mm, equal, cylindric; surface reddish brown (8E8–9F8), hispid, solid, arising from concolorous basal tomentum. PILEUS CONTEXT ≤ 1 mm thick, orange white (5A2) to pale orange (5A3).

BASIDIOSPORES (5–)5.5–6.5(–7) × (2–)2.5–3(–3.5), (6.1±0.31 × 2.9±0.14) µm, Q = 2.1, oblong-ellipsoid to subcylindric, hyaline, smooth, with a few guttules. BASIDIA 18–25 × 5–6.5 µm, cylindrico-clavate to clavate, tetrasporic; sterigmata up to 5 µm long. LAMELLA EDGE sterile, with scattered cheilocystidia together with metuloids. CHEILOCYSTIDIA 20–30 × 8–12 µm, clavate to subclavate with broadly rounded apex, hyaline, thin-walled. PLEUROCYSTIDIA abundant, gloeocystidioid, 18–45 × 5–11 µm, cylindrico-clavate with obtusely rounded apex, often constricted, initially embedded within the hymenium and projecting 20 µm beyond the basidia. METULOIDs scattered, on sides and edge of lamellae, 19–25 × 7–11.5 µm, thick-walled, 1–3.5 µm thick, subventricose with an obtusely rounded apex, projecting 15 µm beyond the basidia. LAMELLA TRAMA irregular, consisting of thick walled, hyaline, skeletal hyphae 2–2.5 µm diam. SUBHYMENIUM indistinct. PILEAL SURFACE a regular cutis consisting of radially repent hyphae, often disrupting to form pileal squamules at the margin, distinctly trichoderm at the disc due to more squamules; squamules up to 840 × 80 µm, composed of fascicles of monomitic hyphae, up to 5 µm diam., often containing brown vacuolar sap, thick-walled, septate with clamp connections. PILEAL CONTEXT consisting of dimitic hyphal system; generative hyphae up to 3 µm diam., not inflated, hyaline, thin-walled, with clamp connections, often collapsing and difficult to observe; skeletal hyphae up to 2.5 µm, hyaline, unbranched, thick-walled, with a narrow lumen. HYPHAL PEGS absent.

ADDITIONAL SPECIMENS EXAMINED: INDIA, MAHARASHTRA STATE, Pune, Pune University Campus (18°31'18.4"N 73°49'53.6"E), 03.08.2009, (AMH 9457), 26.07.2012, (AMH 9526), 01.08.2012 (9527) G. Senthilarasu.

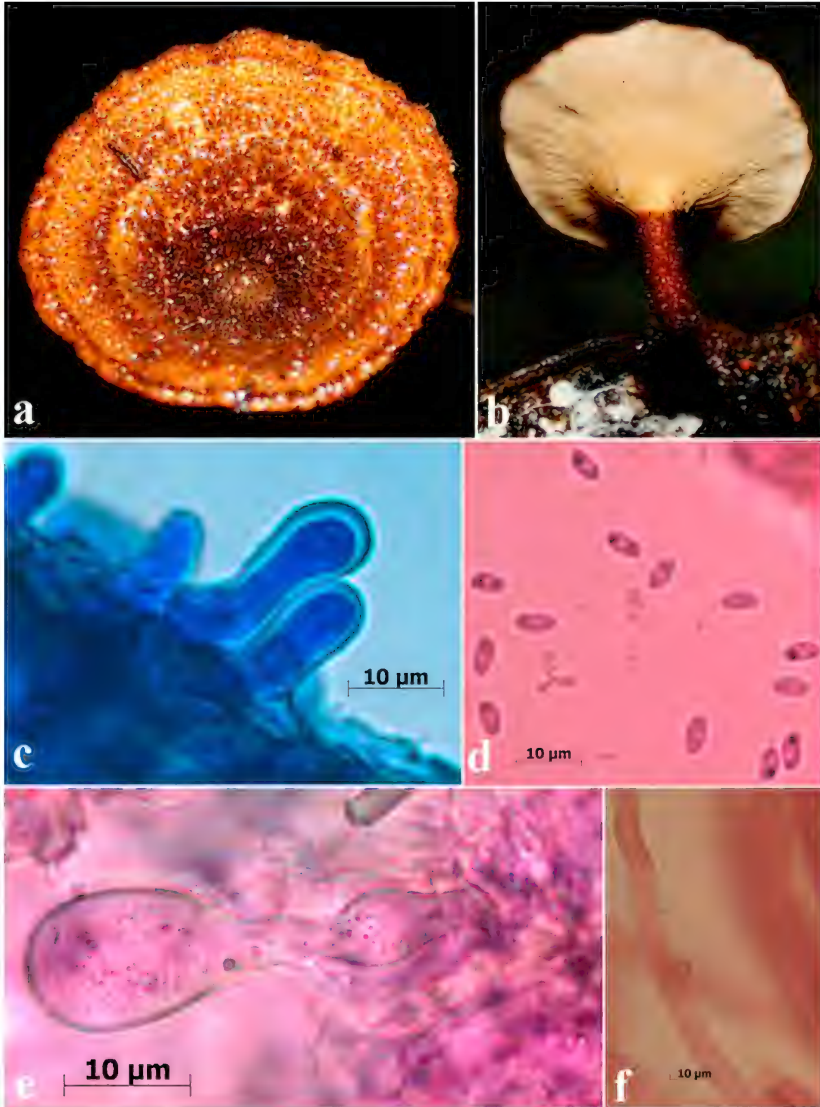


PLATE 1. *Lentinus alpaca*: Under natural conditions on Pune University Campus. A. Surface view. B. Gill view. C. Metuloids. D. Basidiospores. E. Gloeocystidia. F. Pileipellis generative hypha with clamp connection. Photo: Senthilarasu G.

Lentinus alpaca is a fairly common and widespread species in the Pune University Campus but usually found solitary on decaying twigs every year during monsoon. The habit is also (rarely) connate, with a single basidiome arising from the stipe apex of partly decayed basidiome.

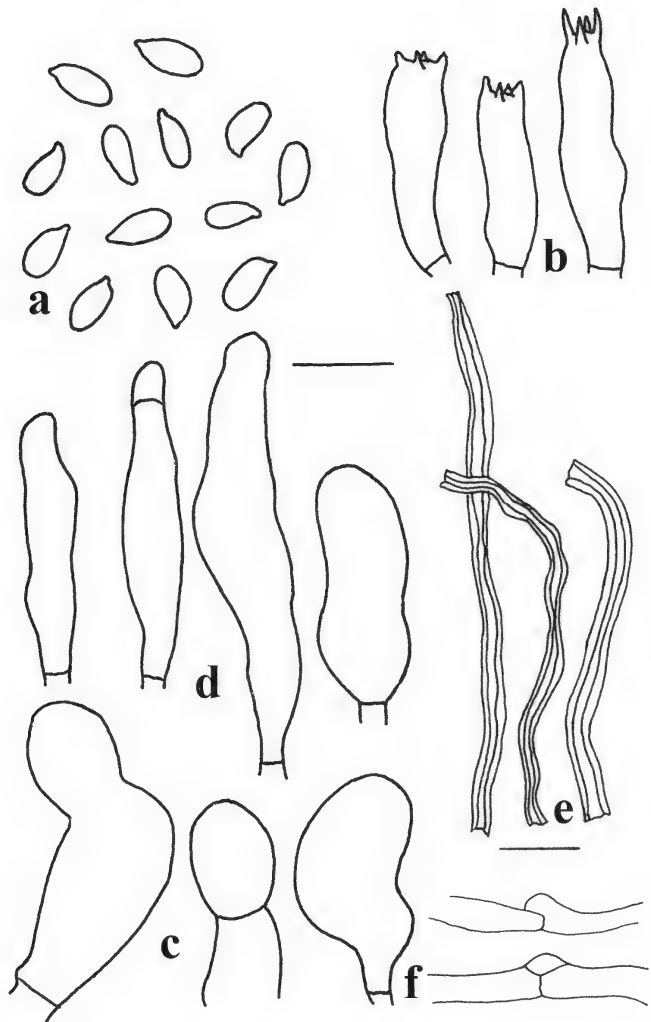


PLATE 2. *Lentinus alpacus*:
A. Basidiospores. B. Basidia. C. Cheilocystidia. D. Pleurocystidia. E. Skeletal hyphae.
F. Generative hyphae with clamp connections. Scale bar = 10 μ m.

The generic demarcation and phylogenetic relationships of *Panus* Fr. and *Lentinus* Fr. are controversial (Corner 1981; Pegler 1983b; Singer 1986; Hibbett & Vilgalys 1991, 1993, Grand et al. 2011). These have been accepted as separate genera by many modern authors (Corner 1981; Moser 1978; Singer 1975, 1986), but were reduced by Pegler (1983b) to subgenera within a broader

concept of *Lentinus*. Redhead & Ginns (1985) created the genus *Neolentinus*, characterised by bipolar mating systems and the ability to cause brown rot, to accommodate species from *Lentinus* sections *Pulverulenti*, *Cirrholi*, and *Squamosi* sensu Pegler (1983b). *Lentinus* sensu stricto is characterized by species having radiate, descending, or intermediate tramas with ligative hyphae and hyphal pegs in the hymenium, whereas *Panus* sensu stricto is distinguished by strongly radiate hymenophoral trama with dimitic hyphae and lacking hyphal pegs. Additionally, in *Panus* young basidiomata are brightly pigmented in purple and fade with age (Hibbett et al 1993). At present it is not clear to which segregate genus *L. alpaca* belongs. However, it could be accommodated in subgenus *Panus* sensu Pegler (1983b) as it lacks both skeleto-ligative hyphae in the context and hyphal pegs in the hymenium, and in section *Panus* based on its hymenial cystidia, hymenophoral trama of radiate construction and entire lamella edge. Therefore, we have followed the broad *Lentinus* concept of Pegler (1983b).

In sect. *Panus*, one African species, *L. courtetianus* Har. & Pat. (Pegler 1983b), resembles *L. alpacus* in having more or less similar sized basidiomata and cheilo- and pleurocystidia. However, *L. courtetianus* has a smooth, pure white or lemon yellow tinted pileus and thicker (3–10 mm diam.), smooth, glabrous, subbulbous stipe.

Lentinus alpacus closely resembles the neotropical species *L. tephroleucus* Mont. (Pegler 1983b) in having small, infundibuliform pileus with short erect fasciculate hairs that become squamulose towards margin and similar sized basidiospores and basidia. However, *L. tephroleucus* has a pale yellowish to grayish brown or cinnamon brown pileus with glabrescent disc and cream coloured lamellae. Microscopically, *L. tephroleucus* is clearly unrelated from *L. alpacus* because of its sclerocystidia.

The southeastern Asian species *Lentinus ciliatus* Lév. (Pegler 1983b) also shares a squamulose pileus and similar-sized spores and basidia but differs in its larger basidiomata, cinnamon to fuscous brown pileus with densely ciliate margin, and thick-walled sclerocystidia.

Lentinus leprieurii Mont. (Pegler 1983a), which resembles *L. alpacus* in its brown pileus with fasciculate hairs, short stipe, and similar-sized basidiospores and basidia, differs in its larger pileus, brown lamellae, thicker stipe (≤ 6 mm), cylindric cheilocystidia, and absence of pleurocystidia. Moreover, *L. leprieurii* grows in tufts, not solitary.

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